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U.S. DEPT. OF AGRICULTURE
NATIONAL PLANT MATERIALS CENTER
BELTSVILLE, MARYLAND

MAY 28 '74

1964 ANNUAL REPORT

PLANT MATERIALS SECTION
CURRENT SERIAL RECORDS



NATIONAL PLANT MATERIALS CENTER
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
Beltsville, Maryland

SOIL CONSERVATION SERVICE
NATIONAL PLANT MATERIALS CENTER
AGRICULTURAL RESEARCH CENTER
Beltsville, Maryland

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United States Department of Agriculture
Soil Conservation Service
National Plant Materials Center
Beltsville, Maryland

INTRODUCTION

This report covers the operations of the National Plant Materials Center, Beltsville, Maryland, for the calendar year 1964. One of eighteen plant testing centers operated by the Soil Conservation Service, U. S. Department of Agriculture, this unit serves as a major assembly point and carries out initial increase of new materials. Materials are then made available to the other seventeen climatically located plant testing centers, where final screening for conservation use is conducted.

Operations at the National Plant Materials Center are carried out on lands assigned by the Agricultural Research Center Operations Division. This area lies at the junction of the Coastal Plain and Piedmont regions of Maryland. The soils are characterized by those common to both these regions, changing quickly from heavy plastic clays to deep droughty sands. Although rainfall is normally in excess of 40 inches per year with equal monthly distribution during the growing season, the period from May to August 1964 was the driest four months in the history of Weather Bureau record keeping. The fall months were not much better, although there was some slight relief.

COLLECTION AND ASSEMBLY OF PROMISING PLANT MATERIALS

More than 1100 new accessions were assigned our numbers in 1964; in addition several large lots of seed were received and transmitted direct to specific plant materials centers without assigning numbers. During the year, fairly extensive collections were made of Festuca, Lolium, Phalaris, Sanguisorba and Trifolium. Substantial additions were made to Brachiaria, Cotoneaster, Eragrostis, Lespedeza, Leucaena, Onobrychis and Panicum collections. Genera involved in the 1964 collections exceeded 100, with several species represented for some of them. Insofar as distribution is concerned, 109 genera were distributed to our plant materials centers, involving 2,150 packets. Seventy-two countries were sources for our new accessions during the year, and we responded to the requests of 30 countries by sending them 490 packets of conservation plant materials. An additional 212 packets of seed were supplied to other agencies, experiment stations, etc.

OTHER PROJECTS

Herbicide Tests on American Beachgrass

A herbicide weed-control test on American beachgrass (Ammophila breviligulata Fern.) was carried out during 1964. The test was conducted in cooperation with Dr. Harold Kerr, Research Agronomist, ARS, who

prepared the treatments and supervised the application. Nine formulations were applied in two locations. All were applied in early May following cultivation. One plot consisted of seedlings transplanted the previous fall, whereas the second plot represented mature stock which developed from rhizomes.

American beachgrass exhibited a high degree of tolerance to all nine formulations. A few of the formulations reflected temporary injury. Atrazine was the one which seemed to be the most damaging in both plots. As far as weed control was concerned, both Dacthal and Treflan did a pretty good job. For information only, the following formulations were included in the test: Simazine; Atrazine; Dacthal; Diphenamid; Treflan; Betasan; Tenoran; Dichlobenil; and H-1318 + picloram.

Herbicide Tests on Tufcote Bermudagrass

Extensive use of Simazine on coastal bermuda has facilitated establishment. This same herbicide was tried on 'Tufcote' bermuda with disastrous results. New growth was killed back to the original plant and up to 80% kill was found in several cases. A safe herbicide for use on Tufcote may be forthcoming soon, as both ARS and the University of Maryland Agronomy Department are running extensive tests on this variety.

An August planting of Tufcote was treated with Treflan at the rate of 4 pounds per acre. This treatment gave excellent weed control with no evidence of either injury or retardation of growth.

Alopecurus pratensis Polycross Nursery

In the spring of 1961 we received from the Institut Voor Rassenonderzoek, Wageningen, the Netherlands, 81 packets of seed. The packets represented one head from each of 81 plants collected from roadsides and grassy plots. All were planted and observed for a period of two years. At the end of that time, 20 individual clones were selected and re-established in an isolated polycross nursery. Seed of this polycross should be available at the end of the 1965 season for those plant materials centers interested.

Plants and Materials for Waterways

The need for a waterway to protect one of the fields afforded an opportunity for establishing some test plantings. Vegetative material of Zoysia Z-73, Cynodon dactylon 'Tufcote', and two dwarf varieties of Phalaris arundinacea were used. In addition, the balance of the waterway provided situations whereby emergence of various plants through jute and perforated fiberglass as well as on bare ground could be compared. Ky-31 fescue was used as a standard for the seeded species. Other species used in the test were: Canada and Kentucky bluegrass; red fescue; bromegrass; crownvetch; small burnet; big trefoil; timothy; and western wheatgrass. Continued observations will be made, and the area will be used for demonstration of two commonly used mulch materials.



Production Planting,
Panicum amarulum (L.),
Panicum virgatum (R.)



Cenchrus ciliaris, showing
 rhizomatous spread.



Clonal selections, black locust,
Robinia pseudoacacia



Production block, selected
 ground cover plants.

I. Typical Operations at the National Plant Materials Center

NOTES & COMMENT

GRASSES

Agropyron tsukushiense (Honda) Ohwi - PI-283170

A tufted perennial; common in grassy places and waste grounds on lowlands in Korea, Manchuria, and the Ryukyu Islands. Stems geniculate; roots with short rhizomes. Seed reproduced at Beltsville has gone to the California, Arizona, New York and Missouri plant materials centers.

Agrostis capillaris L. - PI-283173

A perennial with short, creeping rhizomes. Reportedly found in flood-land meadows, thinned-out forests, forest edges, borders of streams and lakes and coastal sands. Does well on poor soils. Common to Europe, Asia and North Africa. Fine textured. Not aggressive, and hurt by drought. Part of our original seed went to the New York PMC.

Agrostis salmantica (Lag.) Kunth - PI-289641

This was received from Spain as Agrostis sp., and turned out to be a rapid-maturing annual bunchgrass. No seed secured - however, some of the original seed went to Missouri and Washington.

Agrostis transcaspica Litv. - PI-283174

A cool hardy perennial with short, slow-spreading rhizomes, too shallow-rooted to withstand drought. Winter also took its toll, so only a trace of seed was recovered. Original seed went to New York.

Alopecurus dasyanthus Trautn. - PI-283175

A rather small, tufted plant. Found on stone drifts and subalpine meadows in the mountains of Turkish Armenia. This cool hardy perennial with early spring recovery is a poor seed producer. No distribution made.

Alopecurus myosuroides Huds. - PI-289645, 289647

Both accessions of this sparse-leaved, weedy, reseeding winter annual came from Spain. Some of the original seed of each went to the Oregon PMC, but no further distribution is planned - we have enough weeds.

Bromus arvensis L. - PI-292254

This accession should be tested against other annual winter cover crops. We've sent BN-reproduced seed to Michigan, Missouri and New York.

Bromus erectus Huds. - PI-292255

Stayed green all summer despite heat and drought. BN-reproduction to Washington PMC.

GRASSES

Bromus popovii Drobov. - PI-283197, 283198

An annual, found in river valleys in the Balkhash region of Central Asia. One of the two accessions received, PI-283197, turned out to be a biennial, and is yet to be identified. Both re-seed easily. Original seed of each went to Mississippi; NPMC increase to California, Florida, Idaho, Michigan, and Washington.

Bromus severtzowi Regel - PI-283199

This turned out to be B. macrostachys Desf., a weedy, quick-maturing annual. Part of the original seed went to California.

Bromus unioloides H.B.K. - PI-292258

Reported as an annual or short-lived perennial, native to South America; especially common in Uruguay and Argentina. Adapted to a humid, subtropical climate with mild winters. Is unproductive on poor soils. BN-reproduced seed to Florida, Georgia and Mississippi centers.

Bromus uruguayensis Arech. - PI-283201

Acts like, looks like, and should be tried for the same uses as rescuegrass, B. willdenowii. This one had some mildew and leaf spot. We shared our original seed with California, Florida and Georgia.

Bromus willdenowii Kunth

Eleven accessions of this species were grown. Of these, PI-284109 from Argentina and PI-283202 from France, both via Australia, were outstanding. Mississippi has received either original seed or BN increase of all accessions except 284108 (which winter-killed); California BN-reproduced seed of 284107, 284109-112 and 284788. Some of the original seed of 284788 went to Missouri.

Cenchrus ciliaris L. - PI-284830

This one is smaller and finer-stemmed than the general run of buffelgrasses. Abundant leaves and stems with a good seed potential. Original seed went to Arizona - our 1963 seed to Florida and Mississippi.

Desmostachya bipinnata (L.) Stapf - PI-268417

A perennial, distributed through India, Persia, Arabia, North Africa to tropical Africa. Found in desert or semi-desert areas. A rhizomatous, sand-binding plant. Palatability questionable. PI-268417 has survived one winter here with only slight damage. Is being tried on the Delaware shore. Produces many plantable rhizomes, but so far only a limited amount of seed.

Elytrigia intermedia (Host.) Nevski. - PI-283271

Syn. Agropyron intermedium. More stems and seed with us than leaves. Original seed went to Washington, BN reproduction to Idaho.

GRASSES

Eragrostis curvula (Schrad.) Nees

Eight accessions of weeping lovegrass from South Africa were planted this year. Several of them looked exceptionally good, producing an abundance of forage and seed. Although we cannot test for palatability here, PI-295690 and 295691 appeared somewhat softer than the general run of Eragrostis curvula. These accessions should be tested at those centers interested in the species. Seed from our 1964 production went to Arizona, Florida, Mississippi, New Mexico and Texas centers.

Eragrostis sarmentosa (Thunb.) Trin. - PI-295701, 295702

A small, geniculate perennial to one foot high that roots at the nodes. Both good seed producers, but both failed to survive our winter. Distribution was the same as the eight accessions of weeping lovegrass above.

Festuca ampla Hack. - PI-283275

A perennial from the southern region of Portugal. Appears to have considerable drought tolerance. Developed a few short rhizomes. Population uniform. Early, abundant spring recovery. Part of the original seed to California - 1964 increase to Arizona and New Mexico.

Festuca cretacea (Lavrenko) Czern. - PI-283303

The identity of this accession is questioned. Does not compare with F. cretacea described in the literature. Plants observed here were soft and lax and suffered some drought damage. The species is reportedly found on shoals of northern and western Europe. Variable population, resembling Festuca rubra. Washington PMC received some of the original seed; we sent BN-reproduced seed to California, Michigan, Missouri and New York.

Festuca gigantea (L.) Vil. - PI-286206

A perennial widely distributed in Europe and temperate Asia. This accession from Czechoslovakia showed some drought stress. Is similar to tall fescue, but with softer foliage; vigorous and leafy. No distribution has been made.

Festuca glaucescens Hegetschw. - PI-283311

Re-identified as Festuca rubra v. pruinosa (Hack.) Howarth on the basis of an herbarium submitted by this office. Is a perennial; produced an abundance of soft forage here, but fall recovery was not good because of matted old growth. Would do much better under grazing or mowing. Has short rhizomes. We shared the original seed with New York.

Festuca orientalis Kern. - PI-283314

A perennial native to southeast and central Russia and southeast Hungary. Closely resembles tall fescue; leaves less lax. Good forage producer, with abundant fall recovery. Original seed went to Idaho, Missouri and New York centers.

GRASSES

Festuca ovina v. duriuscula (L.) Koch - PI-286207

A small perennial. This introduction from Czechoslovakia was quite variable in size and color. Very early fall recovery. Distribution of BN-reproduced seed made to Idaho, Michigan, New York and Washington.

Festuca polesica Zapal - PI-283319

A small perennial with rather wiry foliage. Occurs on dunes and wooded sands in arctic Europe. Has general appearance of F. ovina. Part of original seed went to Idaho and New York PMC's.

Festuca psammophila Fritsch - PI-283320

Occurs mainly in sandy places, northeastern Europe. Sometimes regarded as a sub-species of F. ovina. This accession from Poland displayed good vigor and soft foliage. Variable size and growth forms. Part of original seed went to New York; BN-reproduction to California, Georgia, Oregon and Washington.

Festuca pseudodalmatica Kraj. - PI-283321

An aggressive perennial from Czechoslovakia. Same variation in growth form as above. One of the better ovina types. Produced an abundance of seed. Distribution: Idaho, New York (original seed); Michigan, Missouri and Washington (reproduced).

Festuca rubra L. - PI-286208

One of the red fescues tried here. Part of the original seed went to New York - BN-reproduced seed to Idaho, Michigan, Missouri and Washington.

Festuca rubra v. heterophylla (Lam.) Mutel - PI-286209

With a variable population and shy on leaves, it wasn't impressive here. Distribution: Idaho, Michigan, Missouri, Washington.

Festuca trachyphylla (Hackel) Kraj - PI-283323

A tufted perennial common on poor limestone soils, found only in the northern Alps of western Europe. Reported as being closely related to F. ovina. Considered valuable as a sheep food. This introduction is variable in growth and color - believe it has possibilities. BN-reproduced seed to Idaho, Michigan, New York and Washington centers.

Festuca uechtritzi Wiesb. - PI-283324

A perennial similar in most respects to F. arundinacea. Occurs in southern France, Western Siberia, and North Africa. New York and Washington centers received some of the original seed; seed increased here went to Idaho, Michigan and Missouri.

GRASSES

Ischaemum indicum (Houtt.) Merrill var. longipilum (Hack.) Bor - BN-14805

A small annual bunchgrass native throughout Ceylon and parts of India. Jack Harlan robbed the den of a harvester ant on the rocky slopes above Igatpuri, and this, plus the following two species, is the result. Was not distributed.

Ischaemum rugosum Salisb. var. rugosum - BN-14804

Common to wet places in the plains of India. Eaten by cattle and horses when young. No distribution.

Ischaemum tumidum Stapf - BN-14806

Is found in the states of Madras and Bombay. It is characterized by swollen raceme joints and small leaves. Can't suggest a possible use for any of these three. No distribution.

Juncus gerardi Loisel. - PI-269840

Has done nothing for us since 1961. Persists and spreads a little. It's a plant for low, wet marshlands and was secured from the Marshland Research Station in Germany. Only vegetative material is available. Some of our original seed did go to California.

Panicum bisulcatum Thunb. - PI-286485

Found in northeast India to China and Japan. Reported as growing in very swampy places from plains to 1500 m. elevation; often found in clearings in forests. The one accession from Japan grown this year was extremely late-maturing - mid-October. Short day induces bloom. Original seed went to Florida, Mississippi and Hawaii.

Panicum laevifolium Hack. - PI-284153

An annual, widely distributed in South Africa and introduced in other countries. PI-284153 was rather slow starting but grew rapidly during late June and July. Culms were geniculate with some rooting at the nodes. Distribution: Florida, California.

Paspalum notatum Flugge

In the spring of 1963 four accessions of bahiagrass were planted for two reasons - comparison, and a winter hardiness test. They involved 'Wilmington' and a North Carolina selection NC-59-26, clonal material of which was supplied by Karl Graetz, Plant Materials Specialist in the Southeast, and seedlings of 'Paraguay' and 'Tifi 2'

Of the four, 'Tifi 2' looked best, producing an abundance of forage and having the greatest spread. Performance of NC-59-26 was only slightly better than that of 'Wilmington', producing a little more vegetative growth on this site - spread was equal. Winter-kill on 'Tifi 2' and 'Paraguay' was 100%; for the other two 90%. By the spring of 1965 there was nothing left of any selection.

Although not included in the trial but growing in the same field, cold hardy plants selected out of 'Wilmington' and assigned BN-11573 were also winter-killed this season.

GRASSES

Poa alpina L. - PI-284251

A stubby plant with short leaves. Good seed potential but fill was not good here. Found along gullies and rocky places 1,000 to 4,000 ft. in the mountains of Northern Europe, the Scottish Highlands, Arctic Europe and Asia. Distributed to New York and Washington plant materials centers.

Poa araratica Trautn. - PI-284840

Question the identity of this accession. Described in the literature as having peculiar woody rhizomes. Only small, rather inconspicuous rhizomes can be found on the two-year-old plants here. Rhizomes not lateral, but grow straight up from deep rootstalk, making it appear as a bunch. Distributed to Idaho, Michigan, Missouri, New York and Washington centers.

Poa iridifolia Hauman - PI-284254

The horsiest of all the Poas grown. A big plant with broad leaves. Stayed partially green all summer. Produced many seed heads but fill was not too good. Needs further testing. BN-reproduced seed went to Arizona, Michigan, Missouri and New Mexico.

Poa silvicola Guss. - PI-283692

A small tufted perennial with beaded underground shoots. Native to wet meadows of the Mediterranean region. Went completely dormant during hot summer months. New York and Washington centers received seed of this accession.

Poa sterilis Bieb. - PI-283963

According to the literature this tufted perennial grows in stony places and calcareous soils in the European part of the Caucasus. Distribution same as above.

Poa stiriaca Fritsch. & Hayek - PI-283964

Resembles Canada bluegrass--good rhizome development, good seed producer. A little shy on leaves. Seed went to Michigan, New York and Washington centers.

Poa violacea Bell. - PI-283965

The one accession planted here failed to survive. The species is reported growing at 1500 to 2300 m. in the Alps of Central Germany. Some of the original seed went to the Washington plant materials center.

Setaria holstii Herrn. - PI-283986

A perennial according to the literature, but it didn't survive the winter here. Good forage producer but late maturing seed. Is common in Western Kenya, and northern and eastern South Africa. Original seed went to Florida.

Setaria spp.

Of all the species tested here this year, the best seed producer was S. italica, PI-283987, giving a pound and six ounces to the rod row.

NOTES & COMMENT

LEGUME & OTHER

Astragalus annularis Forsk. - PI-292385

A small pubescent annual native to sandy areas of Palestine. Germination of this accession was rapid but growth during seedling stage slow. The seed needed scarification. A part of the original seed went to Arizona and California.

Astragalus bourgaeanus Cos. ex Char. - PI-289649

Out of Spain. Is a small, quick annual - matured and died by late July. Some original seed went to the California PMC.

Astragalus cruciatus Link - PI-292386

Another small annual native to dry stony places in the eastern Mediterranean region. Some difficulty was experienced with seedling survival, but germination was rapid for scarified seed. Small, non-aggressive plant. Was distributed to Arizona and California.

Astragalus hamosus L. - PI-292387, 292388

This quick annual is reportedly found in natural pastures, but is better suited for cultivation. It occurs in regions with Mediterranean-Continental climate and along the coast, usually in dry, sandy places. Some difficulty was experienced in keeping the seedlings alive in the two accessions grown here in the greenhouse. PI-292388 was the stronger of the two. Both lacked density. Should be tried with winter annual grasses. Distribution same as above.

Clitoria ternatea L. - PI-283233

This one just made its seed crop in October before frost got it. In addition to use as a green manure or cover crop, it might be a wildlife food in the really mild southern U.S.A. The Mississippi PMC received some of the original seed.

Coronilla varia L.

The fourteen selections of crownvetch under test included the varieties 'Chemung', 'Emerald' and 'Penngift'. To date they appear to drop into two groups. First, the big, coarse ones characterized by Emerald, Chemung, the Tennessee selection BN-11358, and the Wisconsin selection BN-11881. On a green weight basis the Georgia selection BN-11363 was in this group. The balance of the selections, for the most part, can be compared to Penngift both in size and green weight produced. From the chart it can be noted that the 1964 spread is far less than the 1963 measurements. The 1964 spread was confined by diligent use of cultivator and hoe.

We liked the Arkansas selection BN-11045 best because it had finer stems, good rhizome development, and was abundantly leafy. Seed production was moderate.

See table, Page 40, for individual performance notes.

LEGUME & OTHER

Hedysarum humile L. - PI-280258

Native to dry hills, slopes and forest edges in the Mediterranean region, southwest Europe and North Africa. Our one accession from Spain grown in the greenhouse this year was open and straggly. Some of the original seed went to California.

Hedysarum pallens Halacsy - PI-292397

An appressed-pubescent, decumbent, annual, native to dry fields of Palestine. Gave a 3-foot spread in the greenhouse, but few leaves. Went to the California PMC.

Hippocrepis bicontorta Loisel. - PI-292398

An annual, native to sandy soils of Eastern North Africa and Persia. We treated out seed with H_2SO_4 for twenty minutes. Original seed to California PMC.

Hippocrepis multisiliquosa L. - PI-287837

Native to sandy places in Lebanon. This annual proved to be somewhat more dense than other Hippocrepis grown this year, but is a weak seedling. California received some of the original seed.

Hippocrepis salzmanni Boiss. & Reut. - PI-287839

This one came out of Spain, and rated second to H. unisiliquosa in vigor. Original seed to California.

Hippocrepis unisiliquosa L. - PI-292399

The best looking of the Hippocrepis spp. grown this year, this annual was weak in the seedling stage, but developed into a vigorous plant. It is found in fields in the eastern Mediterranean region. Both original and BN-reproduced seed went to California.

Hymenocarpus circinnatus (L.) Savi - PI-292400, 292401

A prostrate annual, native to eastern Mediterranean region. PI-292401 was the better of the two accessions. Abundant seed produced. Pods fall at the slightest touch when ripe. Those left on the bench came up vigorously when watering was resumed in the fall. Distributed to Arizona, California and New Mexico centers.

Lespedeza bicolor Turcz. 'Natob'

Question has been raised from the field as to whether BN-8379 is still 'Natob' or has reverted to some ancestral type through years of reproduction. Seed from the 1959 production, along with seed of BN-11572, from the original 'Natob' plant still at the Morton Arboretum, were planted in 1961 and observed for three years. So far there has been no noticeable difference in plants from the two sources. There is, however, some variation within each source. Consequently, if the plant were moved far enough from its preferred environment, one or more of the variants might persist, resulting in something that would be different from the normal. Small packets of both accessions are available.

LEGUME & OTHER

Lespedeza pilosa (Thunb.) Seib. & Zucc.

It was observed in field trials that this species of lespedeza would turn yellow. Investigation revealed that the plants had failed to produce nodules, or that the few nodules weren't effective. Since no specific inoculant was available for L. pilosa, we decided to grow plants in soils selected from different sites for the purpose of observing nodulation. Soil from a rod-row area where L. pilosa had been grown, soil from an established block of L. bicolor, and a regular greenhouse soil mix were selected. Plants were established in each of the three soils and grown for one year in the greenhouse. All plants produced nodules, as indicated in the table that follows. Even the plants grown in the greenhouse mix produced a sizeable number, apparently coming from some of the innumerable inoculants used in legume production in previous years. Nodules from the plants grown in the soil from the L. pilosa block have been sent to Miss Means, Bacteriologist, Soil and Water Conservation Research, ARS, who is attempting to develop a specific inoculant for the species.

Soil	Av. Length Top	Av. Length Root	Av. No. Nodules
<u>L. pilosa</u> Block	7.8 m.	8.6 m.	84.5
<u>L. bicolor</u> Block	4.9 m.	8.2 m.	18.0
Regular greenhouse mix	10.2 m.	12.0 m.	79.0

Lotus corniculatus L.

Out of the eleven accessions planted, the three best at the end of the second year were PI-283621, NY-3371 and NY-3372.

Lupinus hirsutus L. - PI-289166

Called blue lupine - but our Hungarian seed gave us an ornamental with flowers ranging from white to red. These annual plants grow to two feet and generally bloom in July or August. Mississippi PMC received some of the original seed.

Medicago ciliaris (L.) All. - PI-292415, 292416

Of the two grown, PI-292416 was a good accession with a massive root system; good seed production and good uniformity of ripening. A winter annual. Original seed of 292416 went to Florida and California.

Medicago coerulea Ledeb. $2n = 16$ - PI-283640

A perennial plant from USSR. Wide-spread around the Caspian Sea on dry slopes, steppes, and sandy locations. Plants mostly late-maturing, with a long photoperiod; drought and heat resistant. Produced a good seed crop the first year after planting and has produced a fair amount of forage for two years. Blister beetles became quite fond of it in mid-August, and had to be discouraged with spray. BN-reproduced seed went to Hawaii, Idaho, Michigan, Montana, New York, New Mexico, and Washington PMC's.

LEGUME & OTHER

Medicago intertexta (L.) Mill. PI-220247

An annual found in the Mediterranean region. This particular accession from Sicily spread to 5 feet in the greenhouse. The prostrate stems were somewhat coarse, but would appear capable of producing an abundance of succulent forage. Original seed went to Florida - BN reproduced seed to California. Seed is still available.

Medicago minima (L.) Grufbergs - PI-292418

A densely hairy or downy annual. Grows in dry riverbeds, thin pastures and on stony river terraces - Europe, West Asia and North Africa. A dense plant with abundant stems and leaves. Stems of medium texture, spread to 48 inches in the greenhouse. California and Florida received some of the original seed.

Medicago murex Willd. - PI-290377

A slightly pubescent annual, native to borders of fields and grassy places in the dry sections of the Mediterranean region. This accession from Hungary was the horsiest of all the Medicagos grown this year. Was strong all the way and produced an abundance of forage. Should be added to Medicago collections. Only a trace of seed was received, so no distribution was made of the original seed. Some of our BN-reproduced seed went to the California PMC - more is available.

Medicago orbicularis (L.) All. - PI-289311 button medic

This cool annual, short-lived perennial occurs in southern Europe, Madeira, Canary Islands, Africa and Iran. According to the literature, it grows on sands and gravels along the banks of little streams and brooks. It is reported that this Medicago can develop both as a winter and a spring growing plant. This particular accession, from Hungary, is a deep green, aggressive plant, dense near the center but becoming straggly toward the perimeter. California and Florida each received some of the seed.

Medicago rigidula (L.) Desr. PI-290378

Grows in southern Europe and north Africa. Made good spread but lacked denseness. BN reproduced seed went to California and Florida.

Medicago rotata Boiss. - PI-290430, 290431

Found mainly on calcareous soils in fallows and hills in Syria, Palestine and Mesopotamia. Some difficulty was experienced in keeping seedlings alive in the two accessions grown in the greenhouse this year. Original seed of both accessions went to California and Florida.

Medicago tribuloides Desr. - PI-284123, 289663, 289664, 289666

Species is frequently found on neutral to alkaline situations on soils derived from limestone. Reported to be a good fodder species in the drier areas (14 to 20 in. rainfall) of the Mediterranean region. The burr is not troublesome to sheep. All accessions produced a goodly amount of forage. Original seed of the four went to Florida and California.

LEGUME & OTHER

Medicago tuberculata (Retz.) Willd. - PI-289312

Grows in drier areas of the Mediterranean region. The one accession grown this year displayed a more upright habit of growth than some of the other *Medicagos* - also produced an abundance of leafy material. BN-reproduced seed was distributed to Florida and California.

Melilotus dentatus (Waldst. & Kit.) Pers. - PI-292800

This species, found in southern Sweden, Denmark, Poland, Germany, Austria, Roumania and Yugoslavia, is reported to be the most salt-tolerant species of the genus. It is low in coumarin, but is susceptible to powdery mildew. Our one accession grown this year did not perform well, but this should be tested on saline soils. No distribution.

Melilotus indicus (L.) All. - PI-292801

A small quick annual, it thrives in foothill zones, often in low-lying places, in river valleys and in coastal sands in the Mediterranean region and north. The entire vegetative period does not exceed 55 to 60 days. Plants here grew to about 3 inches, bloomed in June, but did not produce seed. Original seed went to Missouri and Washington centers.

Melilotus infesta Guss. - PI-290839

Reported to be resistant to weevil. This accession from Hungary came up well, but died two months later without blooming. Was not distributed.

Melilotus messanensis (L.) All. - PI-292802

According to the literature, this species is also resistant to weevil. This accession from Sweden did not perform well here - only a few plants bloomed and none produced seed. Some of the original seed went to Missouri and Washington plant materials centers.

Ononis spp.

Four species of *Ononis* were grown this year. All were native to the Mediterranean region. All except *Ononis alopecuroides* L. (PI-292443) proved somewhat difficult to establish. All four species went to the California and Arizona centers. New Mexico received *O. pubescens*, PI-292445.

Ornithopus spp.

Five species of *Ornithopus* were grown this year. All were similar to *O. sativus* Brot. (serradella). They are annuals native to dry sandy areas of the Mediterranean region. According to the literature *O. sativus* prefers a slightly acid soil. Lime is often deleterious to its growth. Inoculation is important. PI-284134, *O. perpusillus* L., was the outstanding species of the five, producing an abundance of forage. However, the other four species deserve honorable mention. Distribution has been made to the Southeast and to California.

LEGUME & OTHER

Phaseolus lathyroides L. - PI-276182, 280130

Both accessions produced a lot of green material. PI-280130 was the later-maturing of the two, producing only a few seeds but many blossoms before being killed by frost. Neither showed signs of drought stress during the long dry spell.

Scorpiurus muricata L. - PI-292465

This annual displayed considerable variability in size. Plants were open and straggly. Native to Palestine. Some of the original seed went to California.

Tetragonolobus palaestinus Boiss. PI-292467, 292468

An annual native to fields and hills of Palestine. The two accessions grown here suffered some drought damage. California received original seed of each.

Trifolium apertum Bobr. - PI-284007

A cool annual found among shrubs, edges of forests and meadows of Asia Minor. PI-284007 from USSR bloomed freely but many florets were empty. Species is grown as a forage crop in Russia. Distributed to the Georgia and Missouri PMC's.

Trifolium bejariense Moric. - PI-284008

Found in sandy or sandy clay soils of open woods and prairies in eastern Texas and Mexico. Was not distributed.

Trifolium canescens Willd. - PI-284257, 284296

A low-growing, cool hardy perennial, native to Transcaucasica. Reportedly shows good resistance to dry conditions. Not too happy here, should do better at higher elevations. Original seed of 284296 went to Missouri PMC - no other distribution was made.

Trifolium cherleri L. - PI-292470 - cupped clover

Another annual native to the Mediterranean region, found in dry sandy places. This one looked good in the greenhouse, strong and dense. No distribution.

Trifolium clypeatum L. - PI-292491 - helmet clover

One of the earlier maturing clovers grown this year. Made good growth and produced a good seed crop. Limited to the islands and coastal districts of the eastern Mediterranean region. Reported to be highly palatable. Distribution: Florida, California.

Trifolium desvauxii Boiss. & Blanche - PI-284026

Annual - native to dry stony places of the sub-Mediterranean region. Good forage producer. Went to Mississippi and California.

Trifolium dichroanthum Boiss. - PI-292473, 292474

Native to hilly country in the eastern Mediterranean region. Sandy soils. PI-292474 bloomed profusely but did not fill particularly well. Needs bees evidently. Is very similar to T. desvauxii in looks and forage production. A procumbent annual. Seed went to the California PMC.

LEGUME & OTHER

Trifolium israeliticum D.Zoh. & Katzn. - PI-292501

An annual. The peduncle elongates after flowering and buries the pods in the soil as well as maturing some seed above ground. This accession produced a good seed crop but rather sparse vegetation. BN-reproduced seed went to California.

Trifolium leucanthum Bieb. - PI-292826

Annual occurring in stony places on the slopes of the Mediterranean mountains. Good vigorous plant forming good mat. Some of our seed crop went to California, Florida and Michigan centers.

Trifolium pilulare Boiss. - PI-292479, 292480

Occurs on stony hills and in shady places in Asia Minor and Syria. Both accessions produced an abundance of seed here, in small, white, furry heads. Good-looking, dense plants. Distributed to Florida, California and Mississippi.

Trifolium purpureum Loisel. - PI-292481

One of the more vigorous and better looking of the clovers grown in the greenhouse this year. Somewhat more upright. Bloomed profusely but produced only a small amount of seed. Reported to be a variable species occurring in fields and open country in the Mediterranean region, Syria and the Caucasus. Cross pollinated.

Trifolium stellatum L. - PI-292485 starry clover

An annual native to dry places in southwest Europe and Asia Minor. Not too large a plant but strong and a good seed producer, being perfectly selfed. Shatters excessively. BN reproduced seed went to California, Florida and Mississippi.

Trifolium stenophyllum Boiss. - PI-292486, 292487

An annual endemic to Palestine. Flowers of the two accessions grown in the greenhouse this year had a distinct cinnamon aroma. Good seed potential, but needs cross-pollination. PI-292487 was the stronger of the two. California PMC received our increase of both accessions.

Trifolium tomentosum L. - PI-292499, 292500

Another Mediterranean annual. One of the more compact clovers. The small, wooly, ball-shaped seed heads fall apart when ripe. Perfectly selfed. California received original seed of both accessions; Florida and Mississippi centers our BN-reproduction.

Trigonella arabica Delile - PI-292502, PI0292503 Arabian fenugreek

Neither accession amounted to much. Lacked density and leaves. Rapid maturing annuals. Original seed to California and Arizona

Trigonella monspeliaca L. - PI-287999

Another annual - was a moderately strong grower but it's hard to see it as a conservation plant. Distribution: California.

Vigna nilotica (Delile) Hook. - PI-292506

From Israel - spread to 6 ft. but never did get around to bloom or set seed. Lacked density. Original seed to Florida and Arizona.

LEGEND FOR GRASS PLANTINGS

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 LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; B-Basal; C-Cauline; D-Distributed
 POLLINATION: S-Self; C-Cross; A-Apomictic
 BLOOM DATE: *-Greenhouse
 MATURE SIZE: Head height-Leaf height x spread (inches)
 SEED COLLECTION: *-Greenhouse collection
 RHIZOMATOUS: 1/

1964 GRASS PLANTINGS - BELTSVILLE, MARYLAND

BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM DATE	MATURE SIZE	SEED COLL. DATE	AMT. OF SEED
12493-61	AGROPYRON tsukushiense	283170	Japan	C H P	MA E <u>L</u> /	MA C		May	26-22x20	June	73 gr.
12496-61	AGROSTIS capillaris	283173	Czecho	C H P	A E <u>L</u> /	A BC		June	17-10x10	July	2 gr.
13979-62	salmantica	289641	Spain	A	F F	F B		May	9-4x4	June/July	No fill
12497-61	transcaspica	283174	USSR	C T P	MA E <u>L</u> /	MA B		June	18-10x8	July	Trace
12498-61	ALOPECURUS dasyanthus	283175	USSR	C H P	MA E	MA B		May	17-11x8	May/June	Trace
13883-62	myosuroides	289645	Spain	A	MA E	MA C		May/June	18-10x9	June/July	2 gr.
13885-62	myosuroides	289647	Spain	A	MA E	F B		June	12-6x4	June/July	5 gr.
12499-61	pratensis	283176	Czecho	C H P	MA F <u>L</u> /	F BC	C	Apr/May	38-20x18	May/June	4 gr.
10721-59	BOUTELOUA curtipendula	'Pierre'	S. Dak.	W H P	MA E <u>L</u> /	A B	C	Jun/July	25-9x11	no collection	made
14353-62	BROMUS arvensis	292254	Engl.	C A	A E	MA C	S	May	20-13x12	June	12 oz.
14354-62	erectus	292255	Engl.	C H P	F E	MA B	C	May	22-6x9	Jun/Aug	4 gr.
14355-62	mollis	292256	Engl.	C A	A E	F C	S	May	34-25x12	June	180 gr.
12518-61	macrostachys	283199	USSR	A	A E	MA BC		May	17-12x14	June	205 gr.
12516-61	popovii	283197	USSR	H B	F E	F BC		May	26-20x13	June	67 gr.
12517-61	popovii	283198	USSR	A	MA E	F C		May	24-15x10	June	72 gr.
14356-62	sitchensis	292257	Engl.	C H P	MA E	MA BC		May	35-14x14	June	179 gr.
14357-62	unioloides	292258	Engl.	C H B	MA E	MA B	Cleist.+S	May	34-25x15	June/July	78 gr.
12520-61	uruguayensis	283201	Uruguay	C H B	A E	MA BC		May	25-21x16	June	2 lbs.
12521-61	willdenowii	283202	France	C H B	A E	MA C	S	May	34-29x19	June	1½ lbs.
12522-61	willdenowii	283203	Uruguay	C H B	MA E	MA BC	S	May	30-25x17	June	146 gr.
12523-61	willdenowii	283204	Japan	C H B	A E	MA BC	S	May	36-28x18	June	1 lb.
12524-61	willdenowii	283205	S.Afr.	C H B	MA E	MA BC	S	May	30-16x15	June	11 gr.
13064-61	willdenowii	284107	Uruguay	C H B	A E	MA BC	S	May	32-24x18	June	1½ lbs.
13065-61	willdenowii	284108	Chile	C T B		Winter-killed					
13066-61	willdenowii	284109	Argen.	C H B	A E	A BC	S	May	30-25x15	June	2¼ lbs.

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 LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; B-Basal; C-Cauline; D-Distributed
 POLLINATION: S-Self; C-Cross; A-Apomictic
 BLOOM DATE: *-Greenhouse
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 RHIZOMATOUS: 1/

1964 GRASS PLANTINGS - BELTSVILLE, MARYLAND

BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM DATE	MATURE SIZE	SEED COLL. DATE	AMT. OF SEED
13067-61	BROMUS willdenowii	284110	Argen.	C H B	A E	MA BC	S	May	30-24x15	June	1 lb.
13068-61	willdenowii	284111	Chile	C H B	MA S	MA B	S	May	18-12x20	June	159 gr.
13069-61	willdenowii	284112	Chile	C H B	MA S	MA B	S	May	12-8x18	June	100 gr.
13473-61	willdenowii	284788	Austral	C H B	MA E	MA BC	S	May	29-22x17	June	15 oz.
12306-61	CALAMAGROSTIS canadensis	NY-1798	Maine	W H P	A E <u>L</u> /	A C	didn't head		-23x24		
13488-61	CENCHRUS ciliaris	284830	S.Afr.	W T P	A S	A BC		Jul/Aug	23-18x24	Aug/Oct	247 gr.
11484-60	DESMOSTACHYA bipinnata	268417	Afghan	W H P	A E <u>L</u> /	A B		Jul/Aug	45-32x40	Aug/Sept	$\frac{1}{2}$ gr.
11919-61	ECHINOCHLOA crusgalli	274913	Turkey	W A	MA S	MA B		Jun/Aug	19-10x18	June/Sept	43 gr.
14017-62	ELYONURUS hirsutus	290761	Pakist.	P		Winter-killed					
12587-61	ELYTRIGIA intermedia	283271	USSR	C H P	MA E <u>L</u> /	F B	C	June	30-5x8	July	25 gr.
14821-63	ERAGROSTIS bicolor	295689	S.Afr.	W P	A E	MA B		Jul/Aug	59-38x33	Aug/Oct	31 gr.
14822-63	curvula	295690	S.Afr.	W P	A E	A B	S	Jul/Aug	44-30x32	Aug/Oct	65 gr.
14823-63	curvula	295691	S.Afr.	W P	A E	A B	S	Jul/Aug	42-25x34	Aug/Oct	6 gr.
14825-63	curvula	295693	S.Afr.	W T P	MA E	F B	S	Jul/Aug	60-32x26	Aug/Oct	152 gr.
14826-63	curvula	295694	S.Afr.	W T P	MA E	A B	S	Jul/Sept	44-18x26	Aug/Oct	42 gr.
14829-63	curvula	295697	S.Afr.	W T P	A E	MA B	S	Jun/Aug	38-18x28	Aug/Sept	142 gr.
14832-63	curvula	295700	S.Afr.	W P	A E	A B	S	Jun/Aug	45-30x34	Aug/Sept	9 gr.
14835-63	curvula	295703	S.Afr.	W T P	A E	MA B	S	Jul/Aug	48-18x34	Aug/Oct	154 gr.
14839-63	curvula	295707	S.Afr.	C P	A E	A B	S	Jul/Sept	45-23x31	Aug/Oct	15 gr.
12589-61	ferruginea	283273	Japan	W H P	MA E	MA B	Didn't head		-12x20		
14820-63	lehmanniana	295688	S.Afr.	W T P	A E	MA B		Jul/Aug	40-23x30	Aug/Oct	85 gr.

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1964 GRASS PLANTINGS - BELTSVILLE, MARYLAND

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14828-63	ERAGROSTIS lehmanniana	295696	S.Afr.	W T P	MA E	F BC		Jul/Aug	37-17x22	Aug/Oct	69 gr.
14830-63	lehmanniana	295698	S.Afr.	W P	A E	MA B		Jun/Aug	43-29x32	Aug/Sept	94 gr.
14831-63	lehmanniana	295699	S.Afr.	W P	A E	MA B		Jul/Aug	45-29x34	Aug/Sept	95 gr.
14824-63	oxylepis	295692	S.Afr.	W T P	F E	F BC		Jul/Aug	15-12x18	Aug/Oct	91 gr.
14833-63	sarmentosa	295701	S.Afr.	W T P	A S	F C		Jul/Aug	11-8x30	Aug/Oct	51 gr.
14834-63	sarmentosa	295702	S.Afr.	W T P	A S	F C		Jul/Aug	11-8x26	Aug/Oct	83 gr.
14837-63	superba	295705	S.Afr.	W T P	A E	MA B		Jun/Aug	41-23x27	Aug/Oct	63 gr.
12591-61	FESTUCA ampla	283275	Portu.	C H P	A E <u>L</u> /	A B		May/June	27-14x13	June	120 gr.
12616-61	caerulescens	283302	Algeria	C P	Winter-killed, after being weakened				by rust and leafspot		
12617-61	cretacea	283303	USSR	C H P	A E <u>L</u> /	A B		May	20-13x15	June	74 gr.
11534-60	elator	270399	USSR	C H P	A E <u>L</u> /	A B		Didn't head	-9x18		
13584-62	gigantea	286206	Czecho	C H P	A E <u>L</u> /	A B		Jun/July	34-16x18	July	2 gr.
12626-61	orientalis	283314	USSR	C H P	A E <u>L</u> /	A B		June	43-26x20	June	206 gr.
13585-62	ovina var. duriuscula	286207	Czecho	C H P	A E	F B		May	14-4x9	June	68 gr.
12118-61	pallescens	269647	Argen.	C P	Died without heading						
12631-61	polesica	283319	USSR	C H P	MA E	F B		May	17-5x8	June	18 gr.
12632-61	psammophila	283320	Poland	C H P	A E	MA B		May	24-10x12	June	193 gr.
12633-61	pseudodalmatica	283321	Czecho	C H P	A E	MA B		May	28-12x14	June	272 gr.
13586-62	rubra	286208	Czecho	C H P	A E <u>L</u> /	A B		May/June	20-14x18	June	150 gr.
13587-62	rubra v. hetero-phylla	286209	Czecho	C H P	MA E	F BC		June	35-17x8	June	70 gr.
12623-61	rubra v. pruinosa	283311	Poland	C H P	A E <u>L</u> /	A B		May	19-14x16	no seed	
12635-61	trachyphylla	283323	Sweden	C H P	A E <u>L</u> /	MA B		May	21-9x14	June	14½ oz.
12636-61	uechtritiziana	283324	Czecho	C H P	A E <u>L</u> /	MA B		May	38-16x22	June	221 gr.
14805-61	ISCHAEUM indicum v. longipilum	H-1766B	India	A	F E	F B		April*	10-4x4	May/June*	1½ gr.

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1964 GRASS PLANTINGS - BELTSVILLE, MARYLAND

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14804-61	ISCHAEUM rugosum v. rugosum	H-1766A	India	A	F E	F B		April *	13-4x4	May/June*	1 gr.
14806-61	tumidum	H-1766C	India	A	F E	F B		April *	10-3x4	May/June*	Trace
11512-60	JUNCUS gerardi	269840	Germ.	P	MA F 1/	MA B		June	6-3x14	July	no fill
12816-61	LOLIUM multiflorum	283609	Sweden	C H A	MA E	MA BC	C	May	18-11x11	June	89 gr.
12817-61	multiflorum	283610	Sweden	C H A	MA E	MA BC	C	May	22-14x10	June	41 gr.
13615-62	multiflorum	286464	Japan	C H A	A E	A BC	C	May/June	34-29x17	June	142 gr.
13616-62	multiflorum	286465	Japan	C H A	A E	MA BC	C	May	33-27x16	June	308 gr.
13617-62	multiflorum	286466	Japan	C H A	A E	A BC	C	May	35-28x15	June/July	196 gr.
13618-62	multiflorum	286467	Japan	C H A	A E	A BC	C	June	38-28x15	June	13 oz.
12821-61	perenne	283614	Poland	C H P	A E 1/	MA B		June	16-7x14	June	97 gr.
13927-62	perenne	290368	Hungary	C H P	A E	A B	C	June	24-10x14	July	100 gr.
13928-62	perenne	290369	Hungary	C H P	A E	A B	C	June	30-14x13	July	110 gr.
13929-62	perenne	290370	Hungary	C H A	A E	MA BC (is probably L. multiflorum)		May	23-14x14	June	194 gr.
13930-62	perenne	290371	Hungary	C H P	MA E	F B	C	June	23-12x12	June/July	45 gr.
13931-62	perenne	290372	Hungary	C H P	A E	MA B	C	May	21-9x12	June	139 gr.
13932-62	perenne	290373	Hungary	C H P	MA E	MA B	C	Jun/July	21-6x8	July	40 gr.
13933-62	perenne	290374	Hungary	C H P	A E	MA B	C	June	24-9x11	July	72 gr.
11453-60	ORYZOPSIS coerulescens	268267	Israel	C H P	F E	F B		May/June	30-10x8	June	Trace
14005-62	PANICUM amarulum	NC-63-3	N.Car.	W H P	A E 1/	A C		Aug	58-40x38	Oct	72 gr.
13552-62	anceps	NY-3357	W. Va.	W H P	A E 1/	A B		Jul/Aug	28-18x20	Aug/Sept	10 1/2 oz.
13553-62	anceps	NY-3358	W. Va.	W H P	A E 1/	A B		Jul/Aug	33-20x26	Aug/Sept	13 oz.
13633-62	bisulcatum	286485	Japan	W A	A E	MA C		Aug/Sept	34-29x31	Oct	123 gr.
15311-64	coloratum	300038	S. Afr.	W A	A P	MA C		Aug/Sept	8-6x24	Oct	Trace
13104-61	laevifolium	284153	India	W A	MA S	F C		Jun/Aug	44-26x26	July/Sept	156 gr.

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1964 GRASS PLANTINGS - BELTSVILLE, MARYLAND

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12923-61	PHALARIS aquatica	283957	Austral	C H P	F E	F BC	C	June	32-14x7	July	6 gr.
13153-61	aquatica	284202	Portu.	C H P	A E <u>1</u> /	A B	C	June	26-14x24	July	1½ gr.
13156-61	aquatica	284205	Turkey	C H P	MA E <u>1</u> /	MA BC	C	June	40-21x17	July	26 gr.
13173-61	aquatica	284222	Israel	C H P	MA E <u>1</u> /	MA BC	C		-13x11	didn't head	
13192-61	aquatica	284241	S.Amer.	C H P	F E	F C	C	June	24-14x10	July	1 gr.
13130-61	arundinacea	284179	France	C H P	A E <u>1</u> /	MA B	C	June	48-18x15	July	11 gr.
13129-61	arundinacea X tuberosa	284178	Wales	C H P	A E <u>1</u> /	MA B	C	June	42-20x19	July	30 gr.
13907-62	minor	289669	Spain	A	MA E	F B		June	24-10x12	June	14 gr.
13202-61	POA alpina	284251	Czecho	C H P	A E	F B		May	11-3x6	June	2 gr.
13489-61	araratica	284840	USSR	C H P	MA E <u>1</u> /	F BC		May	20-14x8	June	33 gr.
13205-61	iridifolia	285254	Argen.	C H P	A E	A BC		May	24-14x17	June	21 gr.
13206-61	ligularis	284255	Argen.	C H P	MA E	MA B		May	12-4x4	June	Trace
13201-61	palustris	284250	Germ.	C H P	A S	MA C		June	23-17x14	July	6 gr.
13588-62	pratensis	286210	Czecho	C H P	MA E <u>1</u> /	MA B		May	16-5x18	May/June	5 gr.
12928-61	silvicola	283962	USSR	C H P	F E <u>1</u> /	MA B		May	19-7x5	June	1½ gr.
12929-61	sterilis	283963	USSR	C H P	MA E	MA BC		May	15-8x11	June	8 gr.
12930-61	stiriaca	283964	Poland	C H P	A E <u>1</u> /	F BC		June	15-7x12	July	16 gr.
13589-62	trivialis	286211	Czecho	C H P	F E <u>1</u> /	MA B		May	16-4x16	June	1 gr.
12931-61	violacea.	283965	Denm.	C H P	F F	F B		Died winter 63-64			
13635-62	SETARIA glauca	286488	Japan	W A	A S	A B		Jun/Sept	9-10x17	Aug/Oct	110 gr.
12944-61	holstii	283986	Sudan	W T P	A E	A BC		Aug/Sept	47-39x30	Oct	10 gr.
12945-61	italica	283987	India	W A	A E	MA C		Jul/Aug	31-25x13	Aug/Sept	1 lb. 6½ oz.
12946-61	italica	283988	Spain	W A	F E	F C		Jun/July	23-16x8	Jun/Sept	24 gr.
14734-63	TRIPSACUM latifolium	293868	C.Rica	W T P	F E <u>1</u> /	MA C		Didn't head	to 4 ft.		
14735-63	laxum	293869	C.Rica	W T P	F E <u>1</u> /	A C		Didn't head	to 10 ft.		

LEGEND FOR LEGUME AND OTHER PLANTINGS

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 BLOOM DATE: *-Greenhouse
 MATURE SIZE: Height-Spread (inches)
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1964 Plantings - Legume and Other - Beltsville, Maryland

BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM DATE	MATURE SIZE	SEED COLL. DATE	AMT. OF SEED
114361-62	ASTRAGALUS annularis	292385	Israel	C A	F P	F D		Mar/Apr**	1x6	Apr/May*	2½ gr.
113887-62	bourgaeanus	289649	Spain	A	MA P	A D		July	2x8	July	9 gr.
114362-62	cruciatus	292386	Israel	C A	F P	F D		Mar/Apr**	2x8	May*	3 gr.
113886-62	hamosus	289648	Spain	A	F P	MA D		Jun/July	3x11	Jul/Aug	3 gr.
114363-62	hamosus	292387	Israel	C A	F S	F D		Mar/Apr**	5x26	April*	21 gr.
114364-62	hamosus	292388	Israel	C A	F S	F D		Feb/Apr**		Apr/May*	27 gr.
112551-61	CLITORIA ternatea	283233	Sudan	W T P	F P	MA D		Jul/Sept	6x16	Sept/Oct	36 gr.
111427-60	CROTALARIA quinquefolia	271287	Surinam	W T P	MA E	A D	C	Oct/Dec*	14x10	-	-
112353-62	HEDYSARUM humile	280258	Spain	P	F P	F D		Apr/May*	3x30	May/June*	10 gr.
114367-62	pallens	292397	Israel	C A	F P	F D		Mar/May*	4x35	Apr/June*	10 gr.
114368-62	HIPPOCREPIS bicontorta	292398	Israel	C A	F P	F D		Mar/May*	2x18	Apr/May*	4 gr.
113715-62	multisiliquosa	287837	Spain	A	MA S	MA D		Mar/Jul*	5x18	May/June*	74 gr.
113717-62	salzmanni	287839	Spain	C A	MA F	MA D		Feb/May*	12x22	Apr/June*	30 gr.
114369-62	unisiliquosa	292399	Israel	C A	MA P	MA D		Mar/Apr*	3x16	Apr/May*	32 gr.
114370-62	HYMENOCARPUS circinnatus	292400	Israel	C A	MA P	MA D		Mar/Apr*	4x30	Apr/May*	98 gr.
114371-62	circinnatus	292401	Israel	C A	MA P	MA D		Feb/Apr*	4x40	Apr/May*	154 gr.
15610-48	INDIGOFFERA cf. pruinosa	172277	S. Afr.	P	MA E	F D		May*	66x28	June*	3 seed
112434-52	LATHYRUS sylvestris	282562	France	P	A P	A D	S	Jul/Aug	10x42	Aug/Oct	84 gr.
112445-61	sylvestris	282765	Netherl	P	A S 1/	A D	S	Jul/Aug	12x40	August	117 gr.
112920-61	sylvestris	282702	Sweden	P	A S 1/	A D	S	-	10x30	did not bloom	
11652-50	venosus	--	Canada	P	F E 1/	MA D		-	9x14	did not bloom	

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1964 Plantings - Legume and Other - Beltsville, Maryland

BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM DATE	MATURE SIZE	SEED COLL. DATE	AMT. OF SEED
LESPEDEZA											
none	capitata	LA #4	La.	P	MA E	MA D		Sept.	48x13	not collected	
13646-62	capitata	---	Md.	P	A E	A D		Sept.	51x14	Oct.	28 gr.
13647-62	capitata	---	Md.	P	A E	A D		Sept.	44x14	Oct.	116 gr.
LOTUS											
12825-61	corniculatus	283618	Italy	H P	A P	A P	C		4x12	did not bloom	
12826-61	corniculatus	283619	Czecho	H P	MA S	MA D	C	Jun/Aug	8x18	Aug.	1 gr.
12827-61	corniculatus	283620	Portu.	H P	A S	A D	C	May/Aug	8x26	Jun/Sept	11 gr.
12828-61	corniculatus	283621	Hungary	H P	A S	A D	C	May/Jul	10x36	Jun/Sept	16 gr.
12829-61	corniculatus	283622	Hungary	H P	A S	A D	C	May/Aug	11x32	Jun/Sept	20 gr.
12830-61	corniculatus	283623	Turkey	H P	F S	F D	C	May/Aug	4x17	Jun/Oct	3 oz.
12831-61	corniculatus	283624	Sweden	H P	F S	F D	C	May/Jun	5x4	Jun/July	5 gr.
12832-61	corniculatus	283625	Czecho	H P	A S	MA D	C	May/Aug	7x28	Jun/Sept	34 gr.
13548-62	corniculatus	NY-3355	NewYork	H P	A S	A D	C	Jun/Aug	8x32	Sept	35 gr.
13549-62	corniculatus	NY-3371	NewYork	H P	A S	A D	C	Jun/Aug	12x40	Jul/Sept	37 gr.
13550-62	corniculatus	NY-3372	NewYork	H P	A S	A D	C	Jun/Aug	10x39	Jul/Sept	18 gr.
LUPINUS											
13794	hirsutus	289166	Hungary	A	A E	A D	C	Mar/May*	23x20	May/Jun*	313 gr.
14384-62	pilosus	292414	Israel	A	MA E	MA D	C	Apr/May*	18x20	June*	Trace
MEDICAGO											
15986-62	blancheana	contam. ex	14400	C A	MA P	MA D		Feb/Apr*	3x34	Apr/May*	18 gr.
12326-62	ciliaris	292415	Israel	C A	MA P	A D	S	Jan/Mar*	5x70	Mar/May*	68 gr.
14386-62	ciliaris	292416	Israel	C A	A P	A D	S	Feb/Mar*	6x71	Mar/May*	53 gr.
12847-61	coerulea	283640	USSR	H P	A S	MA D		May/Sept	15x41	Aug/Oct	6 gr.
15987-62	gallillaea	contam. ex	14470	C A	F P	MA D		Mar/Apr*	2x34	Apr/May*	4 gr.
12233-59	intertexta	220247	Sicily	C A	MA P	MA D		Mar/May*	6x64	May/June*	29 gr.
14388-62	minima	292418	Israel	C A	A P	A D	S	Feb/Apr*	4x48	Apr/May*	14 gr.
13936-62	murex	290377	Hungary	C A	A P	A D		Mar/May*	4x52	May*	58 gr.
13807-62	orbicularis	289311	Hungary	C A	A P	A D	S	Mar/Apr*	4x50	Apr/Jun*	158 gr.
13719-62	polymorpha	287878	Spain	C A	MA D	A D		Mar/May*	3x60	May*	38 gr.
15988-62	" v. vulgaris	contam. ex	13074	C A	MA P	MA D		Mar/Apr*	2x33	Apr/May*	22 gr.

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1964 Plantings - Legume and Other - Beltsville, Maryland

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13937-62	MEDICAGO										
14400-62	rigidula	290378	Hungary	C A	MA P	M D		Jan/Mar*	2x46	Mar/May*	43 gr.
14401-62	rotata	292430	Israel	C A	MA P	MA D		Feb/Apr*	3x26	Apr/May*	36 gr.
13072-61	rotata	292431	Israel	C A	MA P	MA D		Feb/Apr*	3x38	Mar/May*	34 gr.
13074-61	scutellata	284121	Cyprus	C A	MA P	MA D	S	Jan/Mar*	6x54	Mar/May*	3 gr.
13901-62	tribuloides	284123	Cyprus	C A	MA P	MA D		Feb/Apr*	2x38	Apr/May*	11 gr.
13902-62	tribuloides	289663	Spain	C A	A P	A D		Mar/May*	4x58	Apr/Jun*	76 gr.
13904-62	tribuloides	289664	Spain	C A	MA P	MA D		Mar/May*	4x40	May*	49 gr.
13808-62	tribuloides	289666	Spain	C A	A P	A D		Mar/Apr*	4x42	Apr/May*	44 gr.
	tuberculata	289312	Hungary	C A	A P	A D	S	Mar/May*	5x48	May*	21 gr.
13943-62	MELILOTUS										
13944-62	alba	290384	Hungary	B	A E	MA D	S+C	Jun/Aug	40x22	Aug/Sept	59 gr.
13945-62	alba v. annua	290385	Hungary	A	MA E	F D	S+C	Jun/Aug	28x18	Jul/Sept	72 gr.
14553-62	alba v. annua	290386	Hungary	A	MA E	MA D	S+C	Jul/Aug	46x22	Aug/Sept	1 lb 4
14554-62	dentatus	292800	Sweden	B	F S	F D			5x8	did not bloom	
13948-62	indicus	292801	Sweden	A	F E	F D	S	June	3x4	-	-
14555-62	infesta	290389	Hungary		died without bloom						
13950-62	messanensis	292802	Sweden	A	F E	F D		June	3x5	-	-
14556-62	neapolitana	290391	Hungary	A	F E	F D			5x4	died without bloom	
13905-62	speciosus	292803	Sweden	A	F E	F D		June	6x8	not collected	
	sp.	289667	Spain	A	F E	F D			6x5	died without bloom	
14413-62	ONONIS										
14415-62	alopecuroides	292443	Israel	C A	F S	A D		Apr/May*	18x36	May/Jun*	16 gr.
14416-62	pubescens	292445	Israel	C A	MA E	A D		Feb/May*	12x15	Apr/Jun*	12 gr.
13726-62	serrata	292446	Israel	C A	MA P	MA D		Mar/May*	2x12	Apr/May*	2 gr.
	speciosa	287896	Spain	C A	A P	MA D		May/Jun*	2x21	June*	24 gr.
13082-61	ORNITHOPUS										
13083-61	compressus	284131	Portu.	C A	A P	A D	S	Mar/May*	3x40	May/Jun*	6 gr.
13085-61	isthmocarpus	284132	Portu.	C A	A P	A D		Mar/May*	3x37	May/Jun*	10 gr.
13727-62	perpusillus	284134	Netherl	C A	A S	A D		Mar/May*	8x40	May/Jun*	28 gr.
13091-61	pinnatus	287905	Spain	C A	A P	A D		Apr/Jun*	3x46	May/Jul*	3 gr.
	sativus	284140	Portu.	C A	A S	A D	S	Apr/Jun*	5x57	May/Jul*	9 gr.

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1964 Plantings - Legume and Other - Beltsville, Maryland

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12039-60	PHASEOLUS										
12352-61	lathyroides	276182	Austral	W A	A E	A D	Cleis	Jul/Sept	28x34	Aug/Oct	222 gr.
14434-62	SCORPIURUS	292465	Israel	C A	F S	F D		Mar/May*	8x20	May*	32 gr.
14436-62	TETRAGONOLOBUS										
14437-62	palaestinus	292467	Israel	W A	F P	MA D		Jun/Jul	2x8	Jul/Aug	3 gr.
12965-61	apertum	284007	USSR	C A	MA S	MA D		Apr/Jun*	21x48*	June	5 gr.
12985-61	arvense	284027	Turkey	C A	MA P	F D		Mar/Apr*	2x12	Apr/May*	17 gr.
12966-61	bejariense	284008	Engl.	C A	A S	A D		Mar/May*	5x19	May*	22 gr.
13208-61	canescens	284257	Turkey	H P	MA P	A D		No bloom	5x14	-	-
13247-61	canescens	284296	USSR	H P	MA E	MA D		May/Jun	12x9	Jun/Aug	4 gr.
14439-62	cherleri	292470	Israel	C A	A S	A D	S	Mar/Apr*	7x28	Apr/May*	54 gr.
14440-62	clypeatum	292491	Israel	C A	A S	A D	S	Jan/Mar*	11x36	April*	33 gr.
12984-61	desvauxii	284026	Lebanon	C A	A P	A D		Mar/May*	4x36	May/Jun*	25 gr.
14442-62	dichroanthum	292476	Israel	C A	A S	MA D		Apr/May*	12x28	June*	2 gr.
14443-62	dichroanthum	292477	Israel	C A	A S	MA D		Apr/May*	12x28	June*	1/2 gr.
13911-62	hirtum	289673	Spain	C A	A S	A D		Mar/May*	19x33	May*	60 gr.
13912-62	hirtum	289674	Spain	C A	A S	MA D		Apr/May*	15x25	May*	49 gr.
14470-62	israeliticum	292505	Israel	C A	F P	F D		Jan/Apr*	2x14	Mar/May*	32 gr.
13913-62	lappaceum	289675	Spain	C A	A S	A D		Apr/May*	5x34	May*	49 gr.
14444-62	lappaceum	292475	Israel	C A	A S	A D	C	Apr/May*	6x48	May*	95 gr.
14579-62	leucanthum	292826	Sweden	C A	A P	MA D		Mar/Apr*	4x27	Apr/May*	52 gr.
14448-62	pilulare	292479	Israel	C A	A P	A D		Mar/Apr*	4x40	April*	63 gr.
14449-62	pilulare	292480	Israel	C A	A P	A D		March*	4x38	April*	48 gr.
14450-62	purpureum	292481	Israel	C A	A S	A D	S	Feb/May*	12x37	May/Jun*	3 gr.
10394-58	repens 'Nora'	257275	Sweden	H P	MA S	MA D	C	May/Jun	4x19	June	trace
13909-62	resupinatum	289671	Spain	C A	A P	A D	S	Apr/May*	2x46	May*	29 gr.
13910-62	scabrum	289671	Spain	C A	A P	A D		Apr/May*	4x21	May/Jun*	19 gr.

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TRIFOLIUM											
13898-62	squarrosus	289660	Spain	C A	A S	A D		Apr/June*	4x58	Apr/June*	76 gr.
14454-62	stellatus	292485	Israel	C A	A S	A D	S	Mar/Apr*	5x20	Apr/May*	36 gr.
14455-62	stenophyllum	292486	Israel	C A	MA P	MA D		Feb/May*	3x20	May/Jun*	1 gr.
14456-62	stenophyllum	292487	Israel	C A	A P	A D		Mar/May*	4x24	May/Jun*	3 gr.
14468-62	tomentosus	292499	Israel	C A	A S	A D		Feb/Apr*	5x23	Apr/May*	45 gr.
14469-62	tomentosus	292500	Israel	C A	A S	A D		Mar/Apr*	5x21	Apr/May*	33 gr.
TRIGONELLA											
14471-62	arabica	292502	Israel	C A	F P	F D		Feb/Apr*	3x9	Mar/May*	6 gr.
14472-62	arabica	292503	Israel	C A	F P	F D		Feb/Apr*	3x16	Apr/May*	7 gr.
13736-62	monspeliaca	287999	Spain	C A	MA P	MA D		Apr/May*	2x24	May/Jun*	24 gr.
VIGNA											
14475-62	nilotica	292506	Israel	W A	F P	F D	Did not bloom		6x54	-	-

National Plant Materials Center

VICIA ASSEMBLY

An extensive collection of Vicia spp. has been under way for the past few years. This included 37 species from 35 foreign countries, plus many of the named varieties. Of those assembled, 640 accessions were planted, part in the fall of 1963 and part in the spring of 1964.

An attempt was made to evaluate these Vicias by comparing such characteristics as leafiness, stem texture, insect and disease resistance, seedling vigor, shattering, etc., using Vicia sativa, 'Willamette', as a standard. Those that were considered to be the best performers are listed in the following table. Data on the rest is available at the National Plant Materials Center. Since all rows of 'Willamette' winterkilled, a rating of 1 to 5 was used for the recorded factors. Only 50 of the 373 fall-planted accessions lived through the winter. Many of these suffered severely. As may be expected, the Vicia villosa strains were more winter-hardy, but also were more heavily infested with the vetch Bruchid, or weevil.

Conditions for such an evaluation were far from optimum. Drought plagued us most of the summer. We would therefore urge that those centers interested in Vicia not limit their testing to just those listed in the table.

Species included in the 1963-1964 plantings were: V. amoena; andicola; angustifolia; angustifolia v. segetalis; articulata; benghalensis; cornigera; cracca; dasycarpa; disperma; dumetorum; ervilia; flugens; globosa; graminea; grandiflora; hirsuta; hybrida, hyrcanica; lathyroides; leavenworthii; ludoviciana; lutea; macrocarpa; monantha; narbonensis; obscura; pannonica; pannonica v. striata; peregrina; picta; pisiformis; sativa; sativa v. angustifolia; sativa X angustifolia v. segetalis; sylvatica; tenuifolia; tetrasperma; villosa, plus 5 unidentified species.

VICIA STUDY - 1964

	1-Excellent	2-Good	3-Fair	4-Poor	5-Very Poor														

National Plant Materials Center

LATHYRUS ASSEMBLY

175 accessions of Lathyrus spp. were planted in early March of 1964. This study was conducted much the same as the Vicia study. Again lack of cooperation by the weather man greatly hindered the comparison study. The following table contains those that gave a reasonable degree of performance this year. On the basis of the one-year test, probably the best L. sativas were PI-170477 and PI-283550; the three best L. cicera PI-221465, PI-283497, and PI-283504.

Lathyrus species included in the 1963-1964 plantings were:
L. angulatus; aphaca; articulatus; cicera; clymenum, latifolius; niger;
ochrus; psuedocicera; pubescens; sativus; sylvestris; tingitanus;
and vernus.

Performance on the perennial species will be completed during the 1965 season.

LATHYRUS STUDY - 1964

1-Excellent
2-Good
3-Fair
4-Poor
5-Very Poor

BN No.	Species	PI No.	Origin	Emergence	Seedling Vigor	Stand	Stem Texture (Fine to Coarse)	Leaves (Volume)	Aggressiveness	Winter Hardiness	Disease	Full Bloom Date	Insect Damage	Shattering (0 to Excessive)	Seed Collection Dates	Amount of Seed
12709-61	cicera	283497	Portu.	1	1	1	3	3	3	-	3	6/14	2	2	6/23-7/7	15 gr.
12716-61	cicera	283504	Portu.	1	1	1	2	3	3	-	2	5/26	2	4	6/23-6/29	20 gr.
13749-62	cicera	221465	Afgh.	1	2	2	3	3	3	-	2	6/4	2	2	6/29-7/7	24 gr.
7347-62	sativus	170477	Turkey	1	1	2	3	1	1	-	1	5/26	2	3	7/2	111 gr.
12761-61	sativus	283549	Czecho	1	2	1	3	2	2	-	2	5/26	2	2	7/2-7/9	90 gr.
12762-61	sativus	283550	USSR	1	2	1	3	1	1	-	2	5/26	2	2	7/2-7/9	203 gr.
12771-61	sativus	283559	Portu.	1	2	1	3	2	2	-	3	5/26	2	3	6/30-7/14	160 gr.
12772-61	sativus	283560	Morocco	1	2	1	3	2	2	-	2	6/4	2	3	7/2-7/7	110 gr.
12773-61	sativus	283561	Greece	1	2	1	3	2	2	-	2	5/26	2	2	6/30-7/7	204 gr.
12783-61	sativus	283571	Cyprus	1	2	1	3	2	2	-	2	5/26	2	3	6/30-7/7	102 gr.
12784-61	sativus	283572	Cyprus	1	2	1	3	2	2	-	1	5/26	2	2	6/30-7/7	86 gr.
12793-61	sativus	283581	Cyprus	1	2	1	3	2	2	-	1	5/28	2	3	7/2-7/7	100 gr.
12794-61	sativus	283582	Italy	1	2	1	3	2	2	-	2	5/28	2	3	6/30-7/7	125 gr.
12795-61	sativus	283583	Italy	1	2	1	3	2	1	-	2	6/4	2	3	7/2-7/7	105 gr.
12797-61	sativus	283585	Italy	1	2	1	3	2	2	-	2	6/14	2	3	7/2-7/7	18 gr.
12806-61	sativus	283594	Poland	1	1	1	3	2	1	-	2	6/8	2	3	7/2-7/7	153 gr.
12807-61	sativus	283595	Poland	1	1	1	3	2	2	-	2	6/8	2	3	7/2-7/7	78 gr.
13758-62	sativus	232923	Hungary	1	1	2	3	2	2	-	2	6/8	2	3	7/9	80 gr.
13760-62	sativus	239866	Iran	1	2	1	3	2	2	-	2	6/8	2	3	7/9	49 gr.
13761-62	sativus	239867	Iran	1	2	1	3	2	2	-	2	6/8	2	3	7/9	38 gr.
14550-62	tingitanus	292797	Sweden	1	2	1	3	2	2	-	1	5/26	3	3	6/23-7/13	48 gr.

CROWN VETCH ASSEMBLY
BELTSVILLE, MARYLAND

BN No.	OTHER NUMBERS	SOURCE OR VARIETAL NAME	STEMS		LEAVES Volume	SIZE		POUNDS GREEN MATL.	TYPE OF MATL. PLTD.	DATE PLTD.
			Volume	Texture		1963	1964			
5201-60	M2-10215	Emerald	A	C	A	30x96	16x33	42	crowns	5/62
8094-51	-	Penngift	A	F	A	16x48	12x31	29	crowns	5/62
11031-60	-	Tenn.	A	F	A	18x52	12x27	21	crowns	5/62
11032-60	NC-61-8	Tenn.	A	C	A	10x62	18x33	19	crowns	6/62
11045-60	-	Ark.	A	M	A	18x72	18x33	33	crowns	5/62
11358-60	-	Tenn.	A	C	A	18x96	18x37	46	crowns	5/62
11363-60	-	Georgia	M	C	M	26x58	12x30	46	crowns	5/62
11707-60	NY-669	Chemung	A	C	M	28x96	15x28	38	crowns	5/62
11880-58	ML-4902	Iowa	A	M	M	18x50	12x30	18	seedlings	5/62
11881-57	ML-5135	Wisc.	A	C	A	24x84	16x33	41	seedlings	5/62
11882-61	ML-5819	Kentucky	A	M	A	22x54	12x29	21	crowns	5/62
11883-62	ML-5831	Iowa	M	C	M	34x63	28x27	30	crowns	4/63
11884-62	ML-11511	Iowa	Fe	C	M	18x72	20x32	24	crowns	6/62
13581-62	PI-286203	Czecho.	A	M	A	-	19x44	-	seedlings	4/63

LEGEND

STEMS: Volume: A-Abundant; M-Moderately abundant; Fe-Few

Texture: C-Coarse; F-Fine; M-Medium

LEAVES: A-Abundant; M-Moderately abundant

SIZE: Height x Spread (inches)

1964
Grass Seed Renewals
Beltsville, Maryland

BN No.	Name	PI No.	Origin	Amount
	AGROPYRON			
1330	cristatum	109012	Turkey	16 gr.
7508	cristatum	-	Mandan, N. Dakota	123 gr.
12409	cristatum	281862	Germany	52 gr.
12088	desertorum	277354	USSR	378 gr.
1698	elongatum	142012	USSR	24 gr.
12410	junceum	281836	Germany	47 gr.
12411	sibiricum	281864	Germany	7 gr.
3661	trichophorum	150130	Australia	8 gr.
3838	trichophorum	P-41	TOPAR	12 gr.
	AGROSTIS			
6822	tenuis v. oregonensis		Oregon	8 gr.
	ALOPECURUS			
11167	arundinaceus	264822	Italy	6 gr.
11050	pratensis	265564	Netherlands	5 gr.
	ANDROPOGON			
311	gerardii	KG-1262	Kansas	20 gr.
	BRACHYPODIUM			
3003	mucronatum	89817	ARS, Forage Crops	7 gr.
10148	pinnatum	230113	Iran	13 gr.
	BROMUS			
8932	barcensis	233931	Canada	83 gr.
9841	erectus	253301	Yugoslavia	20 gr.
7992	sp. aff. fibrosus	-	Spain	136 gr.
12424	inermis 'Sac'	-	ARS, Forage Crops	91 gr.
	CHRYSOPOGON			
9944	gryllus	254887	Iran	10 gr.
	DACTYLIS			
10387	glomerata	257268	Sweden - 'Tardus II'	12 gr.
11255	glomerata	266226	N.S. Wales, Australia	26 gr.
11344	glomerata	'Sandia'	SCS, New Mexico	144 gr.
	ELYMUS			
3010	junceus	FC-29697	ARS, Forage Crops	107 gr.
8367	sabulosus	P-11599	SCS, Pullman, Wash.	71 gr.
12117	sp.	269646	Argentina	24 gr.
	FESTUCA			
6620	arundinacea	174210	Turkey	24 gr.
6578	rubra 'S-59'	187276	Wales	13 gr.
6756	rubra	189148	Netherlands	7 gr.
11233	rubra littoralis	264442	Germany	35 gr.

Grass Seed Renewals
Beltsville, Maryland

BN No.	Name	PI No.	Origin	Amount
	PANICUM			
2258	amarulum	-	Virginia	10 oz.
8360	amarulum	-	Virginia	96 lb.
8627	amarulum	-	North Carolina	209 gr.
8456	anceps	NY-1071	Virginia	100 gr.
9988	clandestinum	NY-1246	Connecticut	75 gr.
8354	virgatum	-	Arkansas	12 lb.
8574	virgatum	-	New Jersey	19 lb. 8 oz.
8624	virgatum	-	North Carolina	14 lb.
10864	virgatum	-	BN selection	24 lb. 12 oz.
11361	virgatum	-	BN selection	44 oz.
9195	virgatum v. cubense		North Carolina	7 lb. 12 oz.
10996	virgatum v. cubense		North Carolina	8 gr.
11357	virgatum v. cubense		Georgia	6 gr.
13645	virgatum v. cubense		North Carolina	63 gr.
	PHALARIS			
10872	aquatica	-	BN selection	64 gr.
10379	aquatica X arundinacea		BN selection	26 gr.
11271	aquatica X	217441	Italy	29 gr.
	arundinacea			
11703	arundinacea	272123	Poland 'Nakielska'	14 gr.
11275	tuberosa v.	206710	Turkey	9 gr.
	stenoptera			
	PHLEUM			
6719	pratense	188902	Sweden 'Omnia'	15 gr.
	POA			
13766	pratensis	H-824-A	India	7 gr.

1964
Legume Seed Renewals
Beltsville, Maryland

BN No.	Name	PI No.	Origin	Amount
LATHYRUS				
6038	latifolius v. splendens	-	Colorado	174 gr.
2753	sylvestris	-	Washington	94 gr.
11059	venosus var meridionalis	-	Tennessee	12 gr.
LESPEDEZA				
2279	bicolor 'Natob'	-	Morton Arboretum	3 lb.
9249	cuneata	246769	Japan	3 lb. 8 oz.
10849	cuneata	-	BN selection	250 gr.
11400	cuneata	-	BN selection	75 gr.
12112	cuneata	NC-61-9	Selection ex 9250	74 gr.
13648	cuneata	-	Selection ex 12112	212 gr.
13649	cuneata	-	Selection ex 12112	38 gr.
9250	X intermixta	246770	Japan	3 lb.
15539	repens	-	Maryland	44 gr.
LUPINUS				
9322	perennis	-	Maryland	27 gr.
VICIA				
13300	faba	284349	Italy	111 gr.
6360	fulgens	186357	Bulgaria	75 gr.
7446	graminea	197873	Argentina	15 gr.

REIDENTIFICATIONS

Following is a list of reidentifications made on the basis of herbariums submitted to the New Crops Research Branch, ARS, during the period 1963-64.

PI No.	BN No.	Original identification	Reidentification
153968	4140-47	Desmodium sp.	D. affine Schl.
168581	5345-45	Desmodium adscendens	D. purpureum Hook. & Arn.
168582	5346-46	Desmodium stipulaceum	D. purpureum Hook. & Arn.
170008	14219-61	Vicia sativa	V. pannonica Crantz
172276	5608-48	Indigofera sp.	I. cf. pruinosa Welw. ex Baker
172277	5610-48	Indigofera sp.	I. cf. pruinosa Welw. ex Baker
172390	8947	Bromus erectus	B. biebersteinii Roem. & Schult.
185532	6499-49	Indigofera sp.	I. endecaphylla Jacq.
185533	6500-49	Indigofera sp.	I. practicola Bak. f.
188882	6699-	Desmodium sp.	D. triflorum (L.) DC.
188885	6702-49	Indigofera sp.	I. suffruticosa Mill.
193736	7133-50	Indigofera sp.	Antopetitia abyssinica A. Rich.
ex-198015	8353-55	Indigofera sp.	I. pseudotinctoria Matsum
199342	7743-51	Indigofera sp.	I. arrecta Hochst. ex A. Rich.
199344	7745-56	Indigofera sp.	I. arrecta Hochst. ex A. Rich.
199346	7747-51	Indigofera sp.	I. ramosa Cronq.
221965	14182-61	Vicia sp.	V. angustifolia Roth
222217	14183-61	Vicia sp.	V. persica Boiss.
223254	12309-63	Echinochloa coarctata	E. crusgalli (L.) Beauv.
230346	14184-61	Vicia sp.	V. peregrina L.
254922	14186-61	Vicia sp.	V. articulata Hornem
268219	11439-60	Bromus sp.	Brachypodium pinnatum (L.) Beauv.
268235	11449-60	Festuca sp.	Brachypodium pinnatum (L.) Beauv.
268417	11484-60	Pogonarthria sp.	Desmostachya bipinnata (L.) Stapf
269877	11516-60	Bromus sp.	B. stenostachys Boiss
274460	11887-60	Lotus sp.	Dorycnium rectum (L.) Ser.
274913	11914-60	Setaria verticillata	Echinochloa crusgalli (L.) Beauv.
275319	11960-60	Crotalaria sp.	C. medicaginea Lam.
275320	11961-60	Crotalaria sp.	C. cf. filipes Benth.
277354	12088-60	Agropyron sibiricum	A. desertorum (Fisch.) Schult.
282569	12441-61	Zornia sp.	Z. dictyocarpa DC.
283199	12518-61	Bromus severtzowi	B. macrostachys Desf.
283238	12556-61	Coronilla coronata	Galega officinalis L.
283311	12623-61	Festuca glaucescens	F. rubra var. pruinosa (Hack.) Howarth
283613	12822-61	Lotus caucasicus	L. hispidus Desf.
283614	12821-61	Lolium sp.	L. perenne L. (near L. rigidum Gaud.)
283630	12837-61	Lotus pedunculatus	L. hispidus Desf.
283957	12923-61	Phalaris sp.	P. aquatica L.
284027	12985-61	Trifolium sp.	T. arvense L.
284250	13201-61	Poa badensis	Poa palustris L.

REIDENTIFICATIONS
(Continued)

PI No.	BN No.	Original Identification	Reidentification
284251	13202-61	<i>Poa badensis</i>	<i>Poa alpina</i> L.
284258	13209-61	<i>Trifolium echinatum</i>	<i>T. lappaceum</i> L.
284299	13250-61	<i>Trifolium</i> sp.	<i>T. parviflorum</i> Ehrh.
284300	13251-61	<i>Trifolium</i> sp.	<i>T. parviflorum</i> Ehrh.
284468	13419-61	<i>Vicia</i> sp.	<i>V. sativa</i> L.
284469	13420-61	<i>Vicia</i> sp.	<i>V. sativa</i> L.
284470	13421-61	<i>Vicia</i> sp.	<i>V. sativa</i> L.
284471	13422-61	<i>Vicia</i> sp.	<i>V. sativa</i> L.
284543	13462-61	<i>Digitaria</i> sp.	<i>D. cf. setivalva</i> Stent.
289641	13879-62	<i>Agrostis</i> sp.	<i>A. salmantica</i> (Lag.) Kunth
289642	13880-62	<i>Agrostis</i> sp.	<i>Oryzopsis miliacea</i> (L.) Benth. & Hook.
289643	13881-62	<i>Agrostis</i> sp.	<i>Poa pratensis</i> L.
289645	13883-62	<i>Alopecurus</i> sp.	<i>A. myosuroides</i> Huds.
289647	13883-62	<i>Alopecurus</i> sp.	<i>A. myosuroides</i> Huds.
289649	13887-62	<i>Astragalus</i> sp.	<i>A. bourgeanus</i> Cos. ex Char.
289669	13907-62	<i>Phalaris</i> sp.	<i>P. minor</i> Retz
289671	13909-61	<i>Trifolium</i> sp.	<i>T. resupinatum</i> L.
289672	13910-61	<i>Trifolium</i> sp.	<i>T. scabrum</i> L.
289673	13911-62	<i>Trifolium</i> sp.	<i>T. hirtum</i> All.
289674	13912-62	<i>Trifolium</i> sp.	<i>T. hirtum</i> All.
289675	13913-62	<i>Trifolium</i> sp.	<i>T. lappaceum</i> L.
292501	14470-62	<i>Trifolium</i> sp.	<i>T. israeliticum</i> D. Zoh. & Katzn.
295707	14839-63	<i>Eragrostis</i> sp.	<i>E. curvula</i> (Schrad.) Nees
295703	14835-63	<i>Eragrostis sarmentosa</i>	<i>E. curvula</i> (Schrad.) Nees
295700	14832-63	<i>Eragrostis lehmanniana</i>	<i>E. curvula</i> (Schrad.) Nees
295688	14820-63	<i>Eragrostis atherstonei</i>	<i>E. lehmanniana</i> Nees
295690	14822-63	<i>Eragrostis capensis</i>	<i>E. curvula</i> (Schrad.) Nees
295691	14823-63	<i>Eragrostis chalcantha</i>	<i>E. curvula</i> (Schrad.) Nees
295692	14824-63	<i>Eragrostis chloromelas</i>	<i>E. oxylepis</i> (Torr.) Torr.
295693	14825-63	<i>Eragrostis echinochloides</i>	<i>E. curvula</i> (Schrad.) Nees
295694	14826-63	<i>Eragrostis echinochloides</i>	<i>E. curvula</i> (Schrad.) Nees
295697	14829-63	<i>Eragrostis lehmanniana</i>	<i>E. curvula</i> (Schrad.) Nees

National Plant Materials Center
Domestic Distribution of Seed in 1964

Genera	Number of Genera Distributed to:			
	North- east	South- east	Mid- west	West
Acacia.....		1		1
Adesmia.....				2
Aerva.....				1
Aeschynomene.....		1		1
Agropyron.....	3			2
Agrostis.....	3		4	6
Albizzia.....		2		
Alopecurus.....	5		61	4
Alysicarpus.....		2		7
Amorpha.....		1		
Andropogon.....	1	2		
Antheophora.....				2
Anthoschmidtia.....				2
Anthoxanthum.....	1		1	
Antopetitia.....		1		1
Anthyllis.....	1			
Argyrolobium.....				3
Aristida.....				5
Arrhenatherum.....	8			
Astragalus.....	10	2		13
Atylosia.....				1
Biserrula.....				8
Bothriochloa.....		3		
Brachiaria.....		30	15	23
Brachypodium.....				1
Bromus.....			4	9
Calamagrostis.....	1		1	
Calopogonium.....		2		1
Canavalia.....				1
Cantharospermum.....		1		1
Caragana.....	2			
Cassia.....		2		1
Cenchrus.....		21	7	14
Chloris.....		4		
Clitoria.....		9	4	
Colutea.....				1
Coronilla.....	6	10		17
Crotalaria.....		12		
Cytisus.....	2	3		
Dactylis.....	3		4	13
Desmanthus.....		1		
Desmodium.....		39		3
Desmostachya.....	1			

National Plant Materials Center
Domestic Distribution of Seed in 1964

Genera	Number of Genera Distributed to:			
	North- east	South- east	Mid- west	West
Dicanthium.....		1		
Digitaria.....				3
Dolichos.....		8		
Dorycnium.....				1
Echinochloa.....		2		3
Elymus.....	2		1	1
Elyonurus.....				3
Eragrostis.....		1		4
Erianthus.....	1			
Festuca.....	20		1	6
Galega.....	1			
Genista.....				1
Glycine.....		16		3
Hedysarum.....				2
Hippocrepis.....				11
Hordeum.....				6
Hosackia.....				5
Hyparrhenia.....				6
Indigofera.....		3		1
Ixophorus.....				1
Koeleria.....				4
Lathyrus.....	2	4		133
Lespedeza.....	7	12	13	
Leucaena.....		11		4
Listia.....		1		2
Lolium.....	170	8	4	2
Lotononis.....		5		
Lotus.....	6	80	6	70
Lupinus.....		29		2
Malus.....	3			
Medicago.....			1	88
Melilotus.....			9	5
Melinis.....		1		
Miscanthus.....	1	1		
Onobrychis.....			88	50
Ononis.....				3
Ornithopus.....		1		
Oryzopsis.....				11
Panicum.....	12	35	2	52
Paspalum.....		9		
Pennisetum.....	1			
Phalaris.....			16	52
Phaseolus.....		2		

National Plant Materials Center
Domestic Distribution of Seed in 1964

Genera	Number of Genera Distributed to:			
	North- east	South- east	Mid- west	West
Phleum.....				17
Poa.....	1			9
Psophocarpus.....				1
Psoralea.....				2
Pueraria.....				1
Quercus.....	1			
Rosa.....	1			
Sanguisorba.....	1			1
Schismus.....				1
Scorpiurus.....				2
Secale.....	5			4
Sesbania.....		1		
Setaria.....		28		3
Sorghastrum.....	12			
Spartina.....				1
Stipa.....		18		
Stylosanthes.....		1		
Tetragonolobus.....				2
Trifolium.....	3	31	3	106
Trigonella.....				5
Urochloa.....		1		
Vicia.....	3	36	8	257
Vigna.....		2		6
Total.....	302	497	253	1,097

Total Genera:..... 109

Total number of Packets:.....2,149

National Plant Materials Center

Domestic Distribution of Vegetative Material in 1964-1965

BN No.	Species	Type and Amount of Material
9026	<i>Ammophila breviligulata</i>	200 plts.
15038	<i>Arabis procumbens</i> PI-297332	5 "
8967	<i>Arctostaphylos uva-ursi</i>	200 "
15905	<i>Berberis julianae</i>	60 "
15045	<i>Cerastium tomentosum</i> PI-297339	5 "
4158	<i>Cynodon dactylon</i> 'Tufcote' bermudagrass	450 sprigs
11484	<i>Desmostachya bipinnata</i> PI-268417	75 plts.
13459	<i>Elaeagnus umbellata</i>	400 plts.
13460	<i>Elaeagnus umbellata</i>	600 "
14517	<i>Elaeagnus umbellata</i>	40 "
14518	<i>Elaeagnus umbellata</i>	60 "
12357	<i>Herniaria glabra</i>	40 "
12900	<i>Hypericum calycinum</i>	10 "
10762	<i>Liriope graminifolia</i>	100 "
11069	<i>Liriope</i> sp. 'Wonder Evergreen'	580 "
15894	<i>Myrica pensylvanica</i>	850 "
15108	<i>Olea europea</i> PI-298030	2 "
15409	<i>Osmanthus heterophyllus</i> 'Aureus' PI-242290	1 "
15410	<i>Osmanthus suavis</i> PI-242240	1 "
9683	<i>Phalaris arundinacea</i> PI-234694	5 clones
9685	<i>Phalaris arundinacea</i> PI-234696	4 "
9694	<i>Phalaris arundinacea</i> PI-235485	5 "
9697	<i>Phalaris arundinacea</i> PI-235551	5 "
12335	<i>Pinus thunbergii</i> PI-280056	245 plts.
11292	<i>Pittosporum tenuifolium</i> PI-267820	5 plts.
15073	<i>Potentilla andicola</i> PI-297367	5 "
15072	<i>Potentilla argyrophylla</i> v. <i>atrosanguinea</i>	5 " PI-297366
15074	<i>Potentilla buccoana</i> PI-297368	5 "
15075	<i>Potentilla nepalensis</i> PI-297369	5 "
15076	<i>Potentilla recta</i> PI-297370	5 "
15077	<i>Potentilla rupestris</i> PI-297371	5 "
11029	<i>Robinia pseudoacacia</i> 1-0 stock	8 "
11029	<i>Robinia pseudoacacia</i> 2-0 stock	9 "
12312	<i>Robinia pseudoacacia</i> 1-0 stock	75 "
12313	<i>Robinia pseudoacacia</i> 1-0 stock	19 "
12314	<i>Robinia pseudoacacia</i> 1-0 stock	75 "
12363	<i>Robinia pseudoacacia</i> 1-0 stock	35 "
12363	<i>Robinia pseudoacacia</i> 2-0 stock	29 "
12364	<i>Robinia pseudoacacia</i> 1-0 stock	71 "
12364	<i>Robinia pseudoacacia</i> 2-0 stock	45 "
14862	<i>Salix adenophylla</i>	whips
14863	" <i>americana</i> <i>androgyna</i>	"
14864	" <i>bicolor</i>	"
14865	" <i>canescens</i>	"
14866	" <i>chrysostela</i>	"

National Plant Materials Center
Domestic Distribution of Vegetative Material in 1964-1965

BN No.	Species	Type and Amount of Material
12362	<i>Salix cinerea</i>	whips
14867	" <i>cinerea</i>	"
14868	" <i>cinerea</i> X <i>caprea</i>	"
14869	" <i>cordata discolor</i>	"
14870	" <i>cotinifolia</i>	"
14871	" <i>cottetii</i>	"
13685	" <i>dasyclados</i>	"
13674	" <i>gracilistyla</i>	"
14872	" <i>hypoleuca</i>	"
12081	" <i>interior</i>	"
14875	" <i>lanceolata</i>	"
14876	" <i>medemii</i>	"
14877	" <i>muscina</i>	"
14878	" <i>muscina</i> X <i>caprea</i>	"
14879	" <i>myrsinifolia</i>	"
13667	" <i>oxica</i>	"
14881	" <i>phylicifolia</i>	"
14882	" <i>pontederana</i>	"
12358	" <i>purpurea amplexicaulis</i>	"
14883	" <i>purpurea</i> v. <i>stipularis</i>	"
13689	" <i>repens nitida</i>	"
14884	" <i>schraderiana</i>	"
14886	" <i>semipalatinskensis</i>	"
13686	" <i>seringeana</i>	"
14887	" <i>seringeana</i>	"
13561	" <i>sesquiteria</i>	"
14888	" <i>siuzewii</i>	"
14889	" <i>smithiana</i>	"
14890	" <i>splendens</i>	"
13658	" <i>syrticola</i>	"
13664	" <i>syrticola</i>	"
14891	" <i>tetrapla</i>	"
13652	" X <i>chrysostela</i>	"
12360	" X <i>wimmeriana</i>	"
13562	" sp.	"
14734	<i>Tripsacum latifolium</i> PI-293868	Rooted cuttings
14735	<i>Tripsacum laxum</i> PI-293869	" "

National Plant Materials Center

Bulk Seed Shipments

BN No.	Species	Amount
8473	Agropyron smithii	1½ lbs.
8094	Coronilla varia	2 "
Comm.	Festuca arundinacea	1½ "
Comm.	Festuca rubra	1 "
-	Juglans nigra	2 "
8379	Lespedeza bicolor 'Natob'	51 "
8659	Lespedeza cuneata	1 "
9249	Lespedeza cuneata	7½ "
10849	Lespedeza cuneata	2 "
11400	Lespedeza cuneata	2 "
14561	Lespedeza cuneata	1 "
9250	Lespedeza X intermixta	3 "
3532	Lespedeza japonica intermedia	½ "
8360	Panicum amarulum	15 "
8624	Panicum virgatum	4 "
10864	Panicum virgatum	4 "
9195	Panicum virgatum v. cubense	5 "
Comm.	Poa compressa	3 "
14638	Quercus acutissima	30 "
9017	Sanguisorba minor	2 "

Other Shipments

Foreign Exchange	490 pkts.
Interagency & Other	212 pkts.

Foreign Countries
Receiving Shipments

Algeria	Costa Rica	Mexico
Arabia	England	Netherlands
Argentina	Germany	New Zealand
Australia	Greece	Peru
Bolivia	Hungary	Somali
Brazil	Iceland	So. Africa Rep.
Canada	India	Sweden
Central African Republic	Israel	Turkey
Ceylon	Japan	Virgin Islands
Chile	Lebanon	West Pakistan

